AMENDMENTS TO THE CLAIMS

1. (Original) A process for monitoring exogenous nucleic acid in transit, the nucleic acid having been introduced into a cell, the process comprising:

(a) providing a biological sample containing cells into which exogenous nucleic acid has been introduced, wherein the exogenous nucleic acid is in transit;

(b) fixing the cells; and

(c) subjecting the cells to an *in situ* hybridization procedure which comprises contacting the permeabilized cells with a probe which hybridizes to the exogenous nucleic acid; and

(d) visualizing the exogenous nucleic acid in transit.

2. (Original) The process according to claim 1 for determining the number of exogenous nucleic acid in the cytoplasm or in the nucleus.

3. (Original) The process according to claim 1 for determining whether the exogenous nucleic acid is in the cytoplasm or the nucleus.

4. (Original) The process according to claim 1 for determining the length of time required for the exogenous nucleic acid to appear in the cytoplasm.

5. (Original) The process according to claim 1 for determining the length of time required for the exogenous nucleic acid to appear from the cytoplasm to the nucleus.

6. (Original) The process according to claim 1 for determining the efficiency of delivery of the nucleic acid into the nucleus, the process further comprising the step of measuring the ratio of the number of the exogenous nucleic acid in the nucleus to the number of the exogenous nucleic acid in the cytoplasm.

7. (Original) The process according to claim 1 for assessing risk associated with introduction of the exogenous nucleic acid into the cell, the process further comprising the step of determining the number of exogenous nucleic acid in the cytoplasm and in the nucleus at different time intervals after the exogenous nucleic acid has been introduced; determining the ratio of exogenous nucleic acid in the nucleus to cytoplasm at each interval; and predicting, in accordance with said ratio and number of exogenous nucleic acid introduced, the risk associated with introduction of the exogenous nucleic acid into the cell.

8. (Original) A process for determining the optimum parameters for obtaining a desired copy number of exogenous nucleic acid introduced into the cell, the process comprising:

(a) introducing an exogenous nucleic acid into a cell under a set of parameters;

(b) monitoring the exogenous nucleic acid according to the process defined in claim 1 to determine the number of exogenous nucleic acid in the cytoplasm or in the nucleus at different time intervals after the nucleic acid has been introduced; and

(c) determining the set of parameters under which the exogenous nucleic acid is delivered in the desired copy number into the cell.

9. (Original) The process according to claim 8 wherein one of the parameters is the length of time in which the exogenous nucleic acid is in contact with the cell.

10. (Original) The process according to claim 8 wherein one of the parameters is the ability of a gene delivery vector to deliver the exogenous nucleic acid.

11. (Original) A process for determining the proportion of cells competent to receive exogenous nucleic acid, the process comprising:

(a) introducing an exogenous nucleic acid to a portion of a population of cells;

(b) monitoring the exogenous nucleic acid according to the process defined in claim 1 to determine the presence of the exogenous nucleic acid in the cell; and

(c) determining the number of cells in which the exogenous nucleic acid is present as a proportion of the portion of cells, wherein the proportion is the proportion of cells of the population competent to receive the exogenous nucleic acid.

12. (Original) A process for identifying whether a cell contains an exogenous nucleic acid, wherein the exogenous nucleic acid is free of sequences encoding a selection marker or reporter protein intended to select for or identify the cell as containing the exogenous nucleic acid, the process comprising:

(a) introducing the exogenous nucleic acid into the cell; and

(b) monitoring the exogenous nucleic acid according to the process defined in claim 1;

wherein visualization of the nucleic acid in the cell indicates that the cell contains the exogenous nucleic acid.

13. (Original) A process for identifying a molecular marker associated with the competency of a cell to receive exogenous nucleic acid, wherein the cell comprises an antigen, the process comprising:

(a) introducing an exogenous nucleic acid to the cell;

(b) monitoring the exogenous nucleic acid according to the process defined in claim 1;

(c) testing the fixed cells for binding of the antigen with an antibody, wherein the antibody is capable of binding to the antigen in the fixed and permeabilized cell; and

(d) determining whether the antigen co-localizes with the exogenous nucleic acid in transit;

wherein co-localization of the exogenous nucleic acid in transit with the antigen indicates that the antigen is a molecular marker associated with transformation competency.

14. (Original) A process for identifying a cell that is competent for receiving exogenous nucleic acid, the process comprising monitoring the exogenous nucleic acid according to the process defined in claim 1 for presence of the exogenous nucleic acid in the cell.

15. (Original) The process according to any one of claims 1 to 14 wherein the nucleic acid is DNA.

16. (Original) The process according to claim 15 wherein the DNA is introduced into the cell by *Agrobacterium*.

17. (Currently Amended) The process according to ~~any one of claims 1 to 16~~ claim 1wherein the *in situ* hybridization procedure is fluorescence *in situ* hybridization.

18. (Currently Amended) The process according to ~~any one of claims 1 to 17~~ claim 1 wherein the cell is a plant cell.

19. (Original) The process according to claim 18 further comprising the step of removing the cell wall.

20. (Currently Amended) The process according to ~~any one of claims 1 to 19~~ claim 1, further comprising the step of permeabilizing the cells prior to contacting the cells with the probe.

21. (Original) A process for identifying a cell competent to receive exogenous nucleic acid, the process comprising the step of identifying expression of a Sec3 protein in the cell, wherein Sec3 expression indicates that the cell is competent to receive exogenous nucleic acid.

22. (Original) The process according to claim 21, wherein the Sec3 protein is VirD2-Interacting protein (VDI), and wherein the cell is a plant cell.

23. (Original) A process for identifying a cell competent to receive exogenous nucleic acid, comprising the step of identifying expression of a component of Exocyst complex in the

cell, wherein expression of the component indicates that the cell is competent to receive exogenous nucleic acid.

24. (Original) The process according to 21 or 23 wherein the cell is a plant cell.

25. (Original) A kit for monitoring exogenous nucleic acid in transit, the nucleic acid having been introduced into a cell, the kit comprising:

(a) reagents for fixing the cells;

(b) reagents for permeabilizing the fixed cells;

(c) reagents for *in situ* hybridization of a probe with the exogenous nucleic acid; and

(d) instructions for using the reagents (a) to (c) to monitor the exogenous nucleic acid in transit.

26. (Original) A process for producing cells competent to receive exogenous nucleic acid, the process comprising the step of expressing Sec3 protein under control of an inducible promoter in the cell.

27. (Original) The process according to claim 26, wherein the Sec3 protein is VirD2-Interacting protein (VDI), and wherein the cell is a plant cell.